

**REMARKS**

Claims 1, 4-28, 31, and 32 are all the claims pending in the application.

At page 2 of the Office Action, Claim 1 has been rejected under 35 U.S.C. § 112, first paragraph. The Examiner considered that the specification is not enabling with respect to the claimed "metal oxide."

Applicants respectfully traverse the rejection for the following reasons.

In the present specification, Applicants have provided ample examples for the metal oxide, including TiO<sub>2</sub> (Example Nos. 1-19), ZrO<sub>2</sub> (Example Nos. 20-22), MgO (Example Nos. 23-25), Fe<sub>2</sub>O<sub>3</sub> (Example No. 26), CeO<sub>2</sub> (Example No. 27), SnO<sub>2</sub> (Example No. 28) and In<sub>2</sub>O<sub>3</sub> (Example No. 29). All of the Examples show a number average particle size of 40 μm or less (Tables 1-4).

Applicants submit that these examples are representatives of metal oxides, and therefore one skilled in the art would be able to make and use the present invention in view of the disclosure. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

At page 2 of the Office Action, Claim 1 has been rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing new matter with respect to the recitation of "40 μm or less."

Applicants respectfully traverse the rejection for the following reasons.

In the specification, all of the Examples show a number average particle size of 40  $\mu\text{m}$  or less (Tables 1-4), including  $\text{TiO}_2$  (Example Nos. 1-19),  $\text{ZrO}_2$  (Example Nos. 20-22),  $\text{MgO}$  (Example Nos. 23-25),  $\text{Fe}_2\text{O}_3$  (Example No. 26),  $\text{CeO}_2$  (Example No. 27),  $\text{SnO}_2$  (Example No. 28) and  $\text{In}_2\text{O}_3$  (Example No. 29). Among these examples, Example No. 21 ( $\text{ZrO}_2$ ) shows a number average particle size of 40  $\mu\text{m}$  (Table 3).

Accordingly, Applicants submit that the specification provides support for the recitation of “40  $\mu\text{m}$  or less,” and withdrawal of the rejection is respectfully requested.

At page 3 of the Office Action, Claims 1, 4-6, 11-13, 20, 23, 24 and 26-28 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Jodden ‘163.

Applicants respectfully traverse the rejection for the following reasons.

Jodden teaches that the particle size of the raw material containing titanium oxide is preferably from 20 to 1000  $\mu\text{m}$  and the particle size of the comminuted product is preferably from 60 to 600  $\mu\text{m}$ . *See*, column 1, lines 48-58.

In contrast, in the present invention, the metal oxide powder used as a raw material preferably has an average particle size of 0.1  $\mu\text{m}$  or less (*See*, for example, page 8 of the specification, lines 7-8), and the number average particle size of the product is 40  $\mu\text{m}$  or less.

Accordingly, Applicants respectfully submit that it is not appropriate to conclude that the metal oxide powder produced by the process of Jodden would have the same particle size as that claimed in the present application, on the basis that the process of Jodden is assertedly similar to the process of the present invention.

Accordingly, Applicants submit that the present invention would not have been obvious over Jodden, and thus the rejection should be withdrawn.

At page 3 of the Office Action, Claims 1, 4-6, 11-13, 20, 23, 24 and 26-28 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Pastor '656.

Applicants respectfully traverse the rejection for the following reasons.

Pastor discloses a process for the preparation of a water-free oxide of silicon or germanium. Pastor reacts a nonpolar chloride compound containing the silicon or germanium with dimethyl sulfoxide to form a precipitate containing the oxide. Applicants respectfully submit that this process is entirely different from the process of the present invention.

Further, Applicants respectfully submit that the examples of Pastor do not describe titanium oxide, zirconium oxide or their precursors.

Still further, Pastor does not teach, suggest or appreciate the advantages of  $D_{10}$ ,  $D_{90}$  and a  $D_{90}/D_{10}$  ratio and a ratio of an agglomerated particle size to a primary particle size. Accordingly Applicants respectfully submit that the present invention would not have been obvious from Pastor.

In view of the foregoing, Applicants respectfully submit that the present claimed invention would not have been *prima facie* obvious from the cited references. Accordingly, withdrawal of the rejections is requested.

At page 4 of the Office Action, Claims 1, 4-10, 13, 15, 16, 18-20, 22-24, 26-28, 31 and 32 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brackelsberg '258.

Applicants respectfully traverse the rejection for the following reasons.

Brackelsberg does not disclose or suggest the size of the raw material. On the other hand, in the presently claimed invention, the raw material preferably has an average particle size of 0.1  $\mu\text{m}$  or less. Accordingly, Applicants respectfully submit that it is not appropriate to conclude that the metal oxide powder produced by the process of Brackelsberg would have the same particle size as that claimed in the present application, on the basis that the process of Brackelsberg is assertedly similar to the process of the present invention.

Accordingly, Applicants submit that the present invention would not have been obvious over Brackelsberg, and thus the rejection should be withdrawn.

At page 6 of the Office Action, Claims 1, 4-28, 31 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1-11 of U.S. Patent No. 6,303,091.

Applicants respectfully traverse the rejection for the following reasons.

Claims 1-11 of '091 relate to a method for producing a metal oxide powder comprising calcining a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of zirconium, cerium, indium and tin, in an atmosphere containing a hydrogen halide or chlorine.

However, Claims 1-11 of '091 does not disclose or suggest (1) metals of zinc, cadmium, gallium, germanium, niobium, tantalum, antimony, bismuth, chromium, molybdenum, manganese, cobalt, nickel, uranium, titanium, magnesium and iron; or (2) a fluorine gas or a molecular halogen and steam, as presently claimed.

Accordingly, Applicants submit that the present invention would not have been obvious over Claims 1-11 of '091, and thus the rejection should be withdrawn.

At page 6 of the Office Action, Claims 1, 4-28, 31 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1-6 of U.S. Patent No. 5,736,111.

Applicants respectfully traverse the rejection for the following reasons.

Claims 1-6 of '111 relate to a method for producing an iron-containing complex oxide powder represented by the general formula  $XO_nFe_2O_3$ , wherein X represents one or more elements selected from the group consisting of Pb, Mg, Ca, Sr, Ba, Zn, Cu, Mn, Fe, Co and Ni, comprising calcination in an atmosphere containing at least one gas selected from a bromine gas, an iodine gas, a hydrogen bromide gas and a hydrogen iodide gas.

However, Claims 1-6 of '111 do not teach or suggest (1) a method for producing a simple metal oxide; (2) an oxide of titanium or cerium; (3) a seed crystal; (4) density of the raw material; and (5) a fluorine gas, a hydrogen fluoride gas, or a molecular halogen and steam, as presently claimed.

Accordingly, Applicants submit that the present invention would not have been obvious over Claims 1-6 of '111, and thus the rejection should be withdrawn.

At page 6 of the Office Action, Claims 1, 4-28, 31 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1-23 of U.S. Patent No. 5,688,480.

Applicants respectfully traverse the rejection for the following reasons.

Claims 1-23 of '480 relate to a method for producing a complex metal oxide powder. However, Claims 1-23 of '480 do not teach or suggest a method for producing a simple metal oxide, as presently claimed.

Accordingly, Applicants submit that the present invention would not have been obvious over Claims 1-23 of '480, and thus the rejection should be withdrawn.

At page 6 of the Office Action, Claims 1, 4-28, 31 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1-6 of U.S. Patent No. 5,840,267.

Applicants respectfully traverse the rejection for the following reasons.

Claims 1-6 of '267 relates to a method for producing a metal oxide powder comprising heating a metal or metals in a halogen-containing gas.

On the other hand, the presently claimed invention is directed to a method for a metal oxide powder comprising heating a metal oxide powder or a metal oxide precursor powder in an atmosphere containing halogen, hydrogen halide, or a halogen and steam.

Accordingly, Applicants submit that the present invention would not have been obvious over Claims 1-6 of '267, and thus the rejection should be withdrawn.

At page 7 of the Office Action, Claims 1, 4-28, 31 and 32 have been rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over Claims 1-7 of U.S. Patent No. 5,846,505.

Applicants respectfully traverse the rejection for the following reasons.

Claims 1-7 of '505 relate to a method for producing a double metal oxide of the general formula  $XMO_3$ , wherein X is at least one selected from the group consisting of Li, a, K, Pb, Ba, Mg, Ca, Sr, La, Y and Bi, and M is at least one selected from the group consisting of Al, Mn, Ti, Zr, Sn, Mg, Zn, Fe, Co, Ni, Nb, Ta and W, comprising calcination in the presence of iodine or hydrogen iodide.

However, Claims 1-7 of '505 do not teach or suggest (1) a method for producing a simple metal oxide; (2) cerium oxide; (3) a seed crystal; (4) density of the raw material; and (5) a fluorine gas, a bromine gas, a chlorine gas, a hydrogen fluoride gas, a hydrogen bromide gas, or a molecular halogen and steam, as presently claimed.

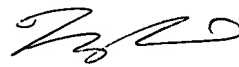
Accordingly, Applicants submit that the present invention would not have been obvious over Claims 1-7 of '505, and thus the rejection should be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111  
U.S. Appln. No. 09/891,655

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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